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ABSTRACT

The intent of the teacher program and instructional materials described here is to provide teachers with knowledge of the principles underlying modern teaching technologies, with special emphasis on the contributions psychology has provided. The focus is on the knowledge and skills necessary for teachers to analyze and devise effective instruction. This descriptive report provides information on the purposes and content of the program and materials as well as activities and resources involved. A critique, history of development, and ordering information are also included. (DS)

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DESCRIPTION OF TEACHER INSERVICE EDUCATION MATERIALS

SUMMARY INFORMATIO

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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Title: TEACHING 2: COGNITIVE LEARNING AND INSTRUCTION

Publication Date(s): Copyright 1975

Intended Users: Preservice and inservice teachers interested in improving their ability to teach intellectual skills by identifying and studying instructional procedures

Grade Level(s): All

Number: Group/Individual

Primary Focus: The intent of this series is to provide teachers with knowledge of the principles underlying modern teaching technologies, i.e., "what psychology has to offer education now."

School subject(s) and/or inservice topic(s) covered: The inservice topics this product addresses are the knowledge and skills necessary for teachers to analyze and devise effective instruction. There is also a concern with problems of remedial and special instruction. Specific subtopics include a behavioral model of teaching, teaching experienced learners, a comparison of Piaget's cognitive development theory with behavior theory and others.

What participant does in using the materials:
The developer suggests three different structures for course organization. These range from a largely self-instructional model to one rich in group exchange. Whichever procedure is chosen, participant will basically: read the text, unit by unit; complete exercises and check them; receive correct responses from the Instructor's Manual via the instructor, another participant or the manual itself. Scheduled tests are taken and participants meet for group discussions.

Resources:

An instructor, who will select the course organization which best suits his/her learning situation, is needed. An Instructor's Manual is provided. The course material is contained in the 263-page text, which includes self-tests, exercises and discussion questions. Time and space for group meetings must be arranged.

Describer critique: This volume is well suited for inservice training because of its modular, self-instructional format. The describer recommends that volumes I and III be utilized in conjunction with volume II.

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1.0 PURPOSES:

The developer states that:

This volume is an analysis of instruction, concerning itself with "the essential components of effective instruction, with the requirements for teaching a general case, with strategies for instructional programming, and with applications of these ideas to teaching concepts, operations and intelligent problem-solving skills. There is also a concern with the problem of remedial and special instruction."

The above comprises the purpose of this module, as stated by the developer. Specific performance objectives are listed at the beginning of each of the volume's fifteen units. Below are objectives from five of the 15 units:

Objectives for Unit 1 include: 1) Name the procedures essential to instruction, 2) Describe the basic characteristics of five different models of instruction and indicate the strengths and weaknesses of each, 3) Suggest which models of instruction may be more appropriate at different educational levels.

Objectives for Unit 2 include: 1) Define (a) task, (b) task stimulus, (c) task response, (d) "do it" signal, (e) attention signal, (f) task directions, (g) prompts, 2) Explain the difference between tasks and programs, 3) Specify what is required to teach a task in addition to presenting task stimuli, 4) Explain how prompts are like directions and how they are different, 5) Analyze a task in terms of task response, 6) Draw a diagram of a general model of teaching.

Objectives for Unit 3 include: 1) Describe and demonstrate procedures for teaching attention signals, "do it" signals, and directions, 2) Identify prompts of various kinds and give rules for their use, 3) Describe and demonstrate fading procedures, 4) Analyze the kinds of errors that can be made in basic instruction and demonstrate correction procedures for each, 5) Give four procedures that apply to each of the three teaching-model components (pre-task, task, and post-task).

Objectives for Unit 4 include: 1) Define concept from a behavioral point of view, 2) Explain what is meant by "teach the general case"; 3) Outline the procedures most essential to teaching concepts as general cases, 4) Describe and explain the weakness of stimulus control procedures that fail to teach a general case, 5) Describe concept learning as a multiple discrimination problem, 6) Contrast the effectiveness of cumulative programming and successive pair programming in teaching sets of concepts, 7) Define S+, S-, and Si.

Objectives for Unit 5 include: 1) Define (a) operation, (b) component operation, (c) formal operation, (d) thinking, 2) Analyze operational behavior to show component operations, 3) Define and distinguish between habit chains and rule chains, 4) Distinguish between rule chains and creative problem-solving behavior. 5) State the basic requirements for teaching operations, 6) Design sets of tasks to teach simple operations, 7) Describe a procedure for teaching generalized imitation, and 8) Describe a procedure for teaching a grammatical rule as a general case.

2.0 CONTENT — Scope and Sequencing of Topics:

This 263-volume is divided into 15 units, and has indices, references, and a glossary appended. Volume contents are:

Preface
To the Instructor
To the Student: How to Use the Text
Acknowledgements
Unit 1: What is Instruction (pp. 1-19)
Unit 2: A Behavioral Model of Teaching (pp. 20-31)
Unit 3: Teaching Tasks - Skills for Direct Instruction of Groups (pp. 32-56)
Unit 4: Basic Requirements for Teaching Concepts (pp. 57-75)
Unit 5: Basic Requirements for Teaching Operations (pp. 76-92)
Unit 6: Teaching Experienced Learners (pp. 93-112)
Unit 7: Problem-Solving Behavior (pp. 113-128)
Unit 8: Review (pp. 129-141)
Unit 9: Concept Analysis in a Finite Universe (Toward a Theory of Programming) (pp. 142-158)
Unit 10: Basic Steps in Programming (pp. 159-173)
Unit 11: Sequencing Tasks in Programming
Unit 12: Intelligence, Retardation and Teaching (pp. 192-214)
Unit 13: A Comparison of Piaget's Cognitive Development Theory with Behavior Theory (pp. 215-231)
Unit 14: Duplications for Education (pp. 232-241)
Unit 15: Review (pp. 242-252)
References (pp. 253-256)
Glossary (pp. 257-260)
Author Index (p. 261)
Subject Index (pp. 262-263)

The developer does not stress that material be used in the order presented, but the describer feels that the course will be most effectively used in the above stated sequence.

3.0 ACTIVITIES AND RESOURCES INVOLVED IN USE OF PRODUCT

3.1 Description of main *inservice* activities:

Each of the fifteen units provides a list of objectives, the lesson, a summary, self-test, practice exercises and discussion questions. The student may go through the text by himself using self-paced progress and checking his results in the Instructor's Manual, or with leader-paced activities.

3.2 Help given in use of product:

A 123-page Instructor's Manual is provided, the second half of which is devoted to this module, the second in the series. The manual contains information about the text and about course organization, and gives suggestions for implementation of the program. Answers to all discussion questions are included in the manual.

4.0 EVALUATION OF TEACHER INSERVICE LEARNING

Each unit has its own self-test to be completed prior to the next unit. Participants may also receive evaluation from each other, and from the course instructor.

5.0 ORDERING INFORMATION

5.1 Resources required/recommended for implementing product:

One text is needed per participant, Accompanying Instructor's Manuals may be ordered in the quantity desired, depending on the individual course's organization. Time needed for implementation will also depend on the procedures used. Space and time for group meeting must be obtained. All instructional materials are contained in the product.

5.2 Distributor name/address:

Science Research Associates
259 E. Erie Street
Chicago, Illinois 60611

(312) 984-2000

5.3 Components/approximate costs:

Component	Purchase	Rental	No. Req.	Reusable
TEACHING 2: COGNITIVE LEARNING AND INSTRUCTION	TOTAL: $7.16			
Manual Text	5.56	No	1/participant	Yes
Instructor's Manual	1.60	No	*	Yes

* Number of Instructor's Manuals may range from one (for the course instructor) to one for each participant. Number will depend on course organization and is left to the discretion of the instructor.

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6.0 HISTORY OF DEVELOPMENT

6.1 Identification of the developer:

The developers are:

Wesley Becker, Professor of Special Education, University of Oregon;

Siegfried Engelmann, Associate Professor of Special Education, University of Oregon; and

Don R. Thomas, Director, Minnesota Learning Center, Brainerd State Hospital.

6.2 How developed and when:

This teaching program was developed in 1975 as a self-contained modular approach for pre or inservice teachers, with an emphasis on behavioral modification techniques.

6.3 Evidence of effectiveness with users:

These materials have been field tested by the developers over several years. The current work represents insights gained through those field tests. However, the project staff provided no results of the field testing they conducted between 1971 and 1974, before publishing this revised edition.

DESCRIBER CRITIQUE

Appropriateness / adaptability / technical quality:

This work is of good technical quality. It examines a variety of teaching methodologies accurately and with good theoretical understanding, giving participants a wealth of material in a fairly concise manner. Because of its modular format, it is highly suitable for inservice training.

Content accuracy/social fairness/community acceptance issues:

The content is accurate and no bias, racial or sexual, is discernible. The material is not controversial except to the extent to which community members take exception to certain instructional models.

Overall summary/comment: This volume, used in conjunction with volumes I and III, constitutes a concise and fairly thorough overview of classroom management, cognitive learning and instruction and evaluation.

The modular format lends itself to inservice training where participants may work independently or in groups and where pacing can be determined by the group or the individual user.

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